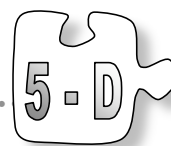


3.2.2 How can I organize it?

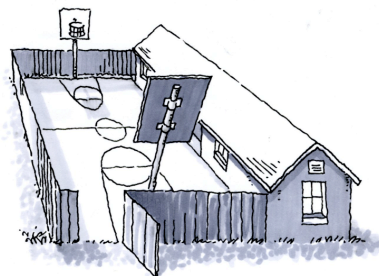
Solving a Word Problem



You have seen that being able to draw diagrams and describe relationships is helpful for solving problems. In this lesson, you will learn another way to organize your thinking as you solve word problems.

3-65. FENCING THE BASKETBALL COURT

The Parent Club at Post Falls Middle School needs 183 feet of fencing to go around the rectangular outdoor basketball court behind the school gym. They will only need to place a fence on three sides of the court because the wall of the gym will form the fourth side. The length of the court is 32 feet more than the width. One of the shorter sides will be 5 feet shorter than the other one to leave room for a gate.



Your task: Determine how much fencing will be used on each side of the court. Be prepared to **justify** your answer and show all of your work. Be sure that someone who is not on your team can read and understand your work.

Discussion Points

What information do we know in the problem?

What do we need to figure out?

What diagram can we draw to represent this situation?

How did we organize our work?

How can a wrong answer help us revise our thinking?

- 3-66. If another team came to look at your paper for problem 3-65, could they understand your work? Why or why not? What else could you do to make it so that someone else could make sense of your work just by looking at it?

- 3-67. Daniel, Donald, and Debra decided to organize their thinking in a table using a method they call the 5-D Process. Get a Lesson 3.2.2A Resource Page from your teacher that shows their work. Then answer some of the following questions during the whole class discussion.

Fencing the Basketball Court

Describe/Draw: The shape is a rectangle but we are only looking for three sides. This problem is about perimeter.

same

Building

Total fencing: 183 ft

32 ft

5 ft

25 ft

Define		Do	Decide
Side 1	Side 2	Side 3	Add the sides together
Total 1: 10	$10 - 5 = 5$	$10 + 32 + 42$	$10 + 5 + 42 = 57$
Total 2: 20	$20 - 5 = 15$	$20 + 32 + 52$	$20 + 15 + 52 = 87$

183 ft

Too small

Too small

Declare:

- “What are the students Describing and Drawing?”
- “What is in the Define column?”
- “What is the Do column used for?”
- “What are they trying to Decide?”
- “What might the Declare section be for?”



- 3-68. While one team was working on problem 3-65, they decided to see if a width of 30 feet would use all of the 183 feet of fencing. They figured out that, with a 30-foot width, the length would be 62 feet and the side with the gate would be 25 feet. Only 117 feet of fencing would be used.

What is a logical number that they should try next for the width so that all of the fencing is used? Explain your **reasoning**.

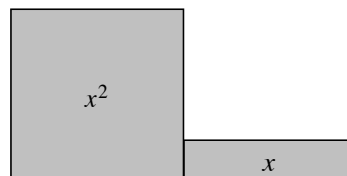
- 3-69. Finish problem 3-65 using the 5-D Process. Continue the chart you looked at in problem 3-67 to find the answer.
- 3-70. Use the steps of the 5-D Process to organize and solve each of the parts below. The Lesson 3.2.2C Resource Page may help you set up your table. Be sure to show each of the “D” steps clearly in your solution process.

- Laura takes very good care of her vehicles. She owns a blue van and a red truck. Although she bought them both new, she has owned the truck for 17 years longer than the van. If the sum of the ages of the vehicles is 41 years, how old is the van and how old is the truck?
- Ryan is thinking of a number. When he multiplies this number by 6 and then subtracts 15 from the answer, he ends up with his original number. What number is Ryan thinking of?



- 3-71. Sketch the algebra tile shape shown at right on your paper. Then:

- Write an expression for the area of the shape.
- Write and simplify an expression for the perimeter of the shape.
- Calculate the area and perimeter of the shape for each value of x .



- a. $x = 7$ b. $x = 2.5$ c. $x = 15$

- 3-72. Copy and simplify each expression.

- a. $7 \cdot (-2)$ b. $-3 \cdot 10$
c. $4 \cdot (-3)$ d. $-8 \cdot (-6)$



- 3-73. What fraction of one hour (60 minutes) is represented by the following numbers of minutes? Simplify each fraction whenever possible. A sketch of a clock might help you.

- a. 10 minutes b. 15 minutes c. 30 minutes d. 20 minutes

- 3-74. Write a sentence that describes the relationship in words. For example, “\$5, \$8” could be \$8 is three more than \$5.

- a. \$13, \$39 b. 25 feet, 17 feet c. 38 lbs., 19 lbs.

- 3-75. Find the missing parts of each number line. Assume that the lines have been split into equal parts.

